



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,003	09/25/2003	Bruce L. Petersen	009-1-001	7693

7590 03/22/2005

LAW OFFICE OF BRIAN R. RAYVE
P.O. Box 11586
Salt Lake City, UT 84147-0586

EXAMINER

COLLINS, TIMOTHY D

ART UNIT	PAPER NUMBER
----------	--------------

3643

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4

Office Action Summary

Application No.

10/672,003

Applicant(s)

PETERSEN, BRUCE L.

Examiner

Timothy D Collins

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 3-5 and 25-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 6-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15-17 and 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. In claims 15-17, the phrase "of respective of said blades" is unclear.

Because of this it cannot be determined what exactly is being claimed about the blades and which blades are involved. Correction is needed. Further because of this the claims have been treated as best understood.

- b. In claims 18-20, the phrase "to respective of the support" is not understood or clear. Because of this the claims have been treated as best understood because it is not clear exactly what is being claimed or which rings or blade control systems are involved. Further because of this the claims have been treated as best understood.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 3643

4. Claims 1,2,6-9 and 20 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by a typical counter rotating blade helicopter with swashplates on each rotor.

c. Note that a swashplate allows for the movement of the blades and controls each blades pitch. It can be called a blade support ring, because it supports a part of the blade against unintentional movement and supports the load on the blade that is caused by the pitch of the blade. Also it is old and well known to use swashplates, counter rotating blades, and the claimed control devices such as a stick, pedals and throttle lever.

5. Claims 1,2,6-12,14-18,21,23 and 24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by USPN 4787573 to Pauchard (hereinafter called 573).

d. Re claims 1 and 2, 573 discloses a rotorcraft with a fuselage (where the pilot sits), at least two rotor blade assemblies (blade 48+49, and blade 50+51). Also 573 discloses a rotor system mounted to the fuselage with a power device for rotating the rotors in opposite directions as seen in figures 1-3 and also in column 2 at lines 32-41. Also a rotor blade control system is seen at least in column 4 at lines 50-65, and column 7 at lines 61-66. Also a flight control input device operable by the pilot as seen at least in figure 1, where the cockpit is shown. Note the pitch angle being controlled or changing controls the vertical and horizontal thrust components of each blade.

e. Re claim 6, 573 discloses a blade support ring at least in each rotor blade assembly as numbers 40 and 41.

- f. Re claims 7 and 8, 573 discloses that pairs of counter rotating blade assemblies are included as seen at least in figure 1 as well as the spec. Also it can be seen at least in figure 3, that equal numbers of blades are included.
- g. Re claim 9, 573 discloses inherently that the blades rotate in opposite directions at the same speed because a wheel (37) is between them and rotates them. Physically they must go at the same speed due to this wheel setup.
- h. Re claim 10, 573 discloses a drive wheel between the upper and lower blade assemblies as seen in number 37. Also spacer wheels may be seen as numbers 44.
- i. Re claim 11, 573 discloses that the wheel may be a gear in column 2 at lines 54-58.
- j. Re claim 12, 573 discloses that guide wheels are used at least in column 7 at lines 9-15, as well as in figure 1 at numbers 45.
- k. Re claim 14, 573 discloses ring gear supports at column 2 lines 59-63 as "runner wheels".
- l. Re claims 15-17 and 18, 573 discloses a control system for the blades in figure 4 and column 7 at lines 60-66. Note: it is suggested that further details of the control system for the blades be positively and clearly claimed and focus put on them.
- m. Re claim 21, 573 discloses a circular fuselage as seen in the figures.
- n. Re claims 23 and 24, see above claims rejections. Specifically 1 and 2 as well as others.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 13,19,20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over 573 as above.

o. Re claim 13, 573 may not specifically disclose that a toothed guide wheel be used, however it does teach of replacing a non-toothed drive wheel with a toothed drive wheel, therefore it would have been obvious to one of ordinary skill in the art to have replaced the non-toothed guide wheel with a toothed one for the same reasons that one would have done so with the drive wheel. The advantages being that it is more solidly engaged and will not slip as well as for the reason in the 573 reference.

p. Re claim 19, 573 may not specifically disclose that the control devices include electrical servo-motors and an electrical ring and brush arrangement, however they are old and well known in the art and therefore it would have been obvious to one ordinary skill in the art to have used them to automate the control systems and make them more powerful also the electrical ring and brush arrangement would be used to allow the control motors to be mounted on the rotors or other moving parts.

Art Unit: 3643

q. Re claim 20, 573 may not disclose wireless communications however they are old and well known in the art. Therefore it would have been obvious to one of ordinary skill in the art to have used a wireless arrangement so as to allow for the use of a system and eliminate the weight of the wires that interconnect the devices. Also this is a method of a systems that eliminates some of the risk associated with an aircraft being struck with hostile fire in that it will not destroy the link between the parts of the control systems.

r. Re claim 22, 573 may not disclose the controls as claimed however it is old and well known to use pedals, stick and throttle levers in helicopter and other aircraft. Therefore it would have been obvious to one of ordinary skill in the art to use these controls to allow for the craft to be operated by a pilot and to allow for the standardized control set in helicopters so that pilots do not have to re-orient themselves when flying different vehicles.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following art discloses helicopter and rotorcraft.

- s. USPN 4828205
- t. USPN 3041012
- u. UPSN 3470765
- v. USPN 6308912
- w. USPN 3507461

Art Unit: 3643


x. USPN 4478379 Counter rotating with swashplates

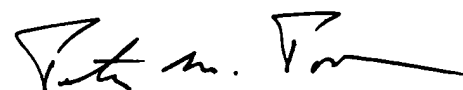
y. USPN 4589611 Counter rotating with swashplates

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy D Collins whose telephone number is 703-306-9160. The examiner can normally be reached on M-Th, 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on 703-308-2574. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Timothy D. Collins
Patent Examiner
Art Unit 3643


Peter M. Poon
Supervisory Patent Examiner
Technology Center 3600

3/14/05